

# NIH at the Crossroads: Myths, Realities and Strategies for the Future

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*Competition for funds from the NIH and other sponsors, intensifying year by year, now stands at an unprecedented level, and shows no sign of abating. Never before have so many established investigators faced so much uncertainty about their longevity as active scientists. Never before have so many novices faced so many disincentives to entering or continuing a research career.*

Dr. William F. Raub, NIH Associate Director for Research and Training, strategy paper, 1982



# NIH Budget Facing a “Perfect Storm” in 2006



- Federal & Trade Deficits
- Defense and Homeland Security needs
- Katrina
- Pandemic flu
- Post- Doubling effects
- Physical Sciences focus
- Biomedical research inflation- 3 to 5%



# NIH Budget: Myths and Realities...

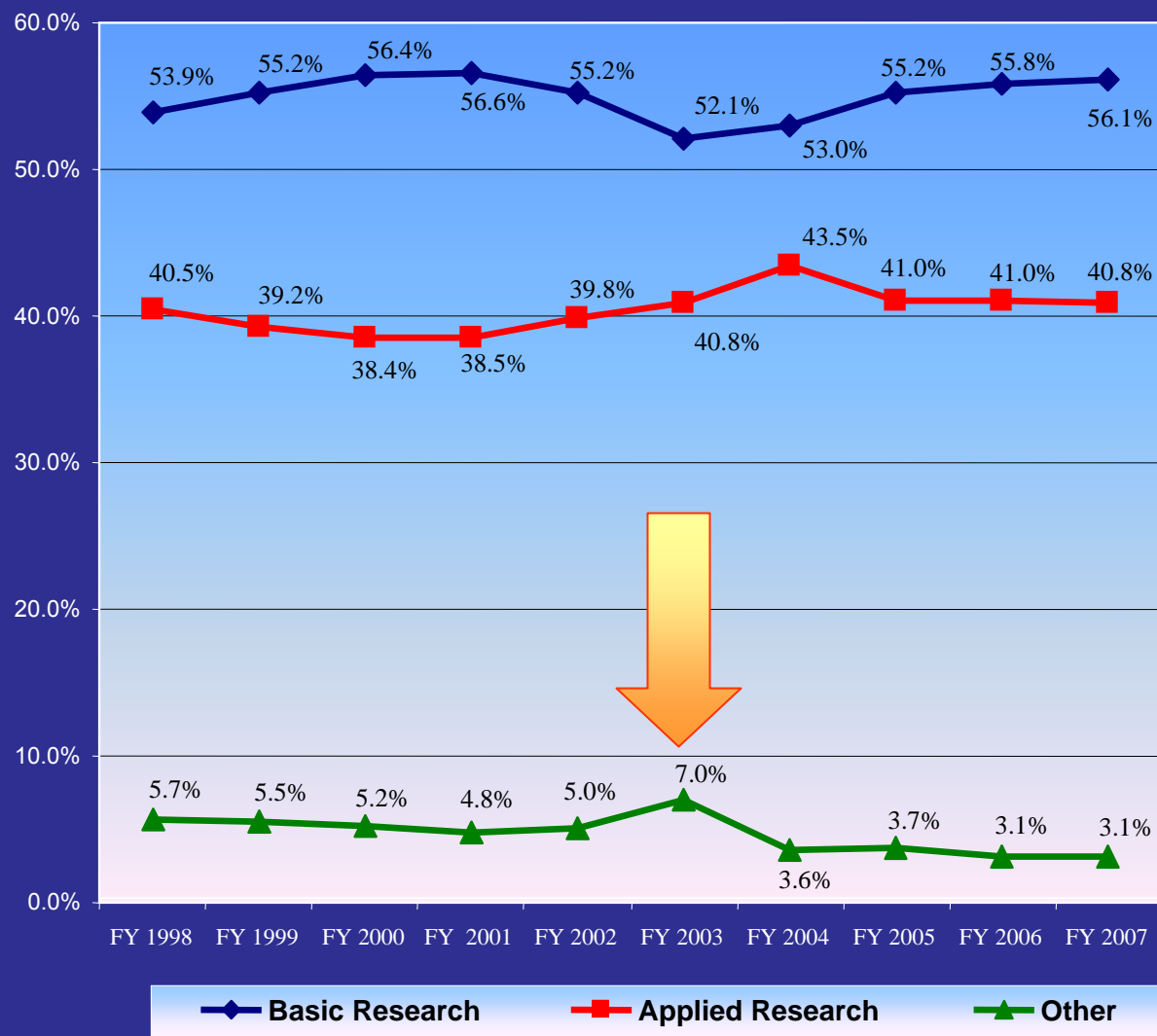




# What is Driving Success Rates?

- Is NIH placing more emphasis on applied as opposed to basic science
- Is NIH shifting towards solicited research (RFAs and PAs) at the expense of unsolicited, investigator-initiated research?
- Is it due to the Roadmap?

# Basic and Applied Research





# What is Driving Success Rates?

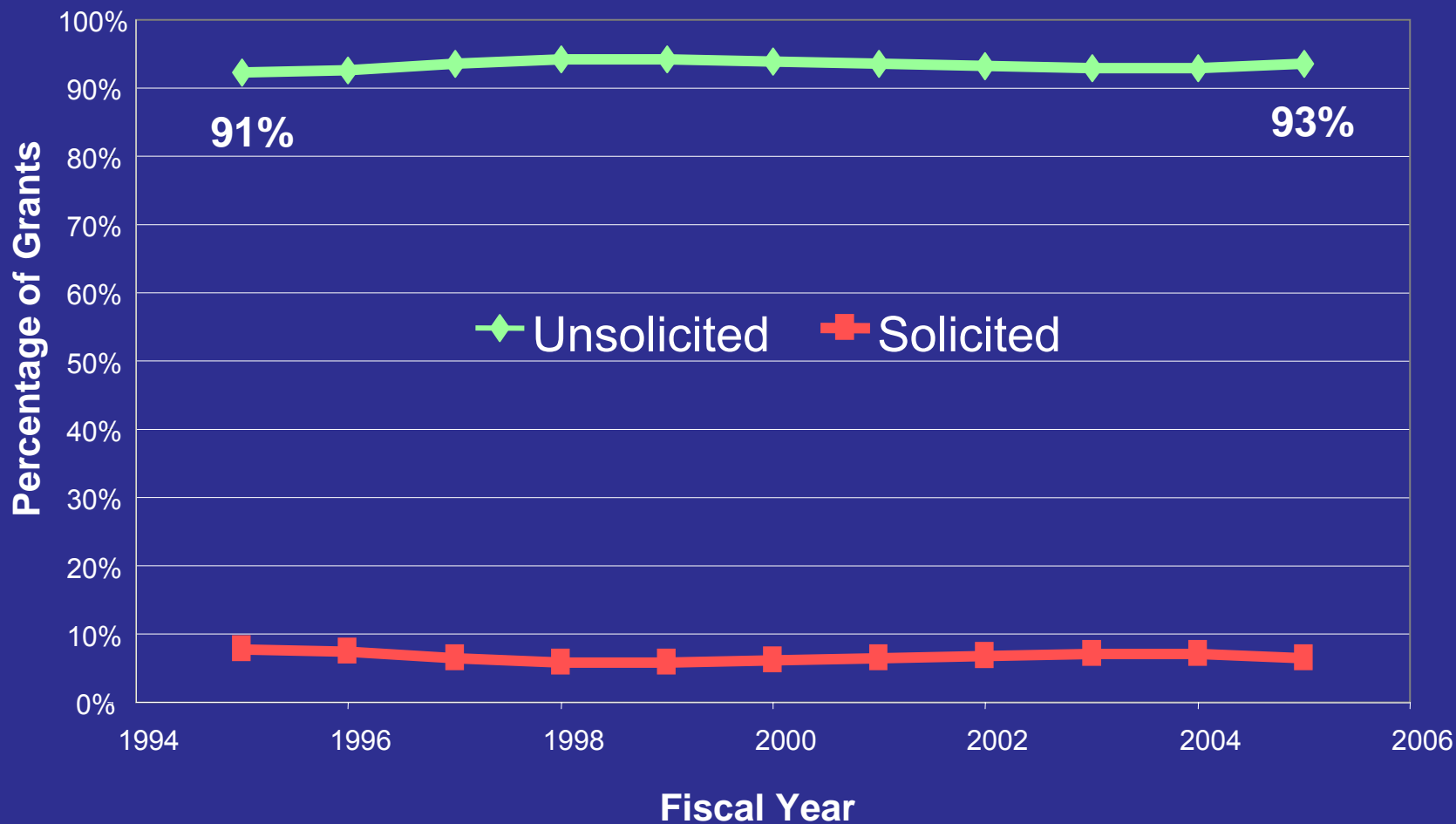
- Is NIH placing too much emphasis on translational science at the expense of basic research?
- Is NIH shifting towards solicited research (RFAs and PAs) at the expense of unsolicited, investigator-initiated research?
- Is it due to the Roadmap?







# Grants: Unsolicited Far Outnumber Solicited







# What is Driving Success Rates?

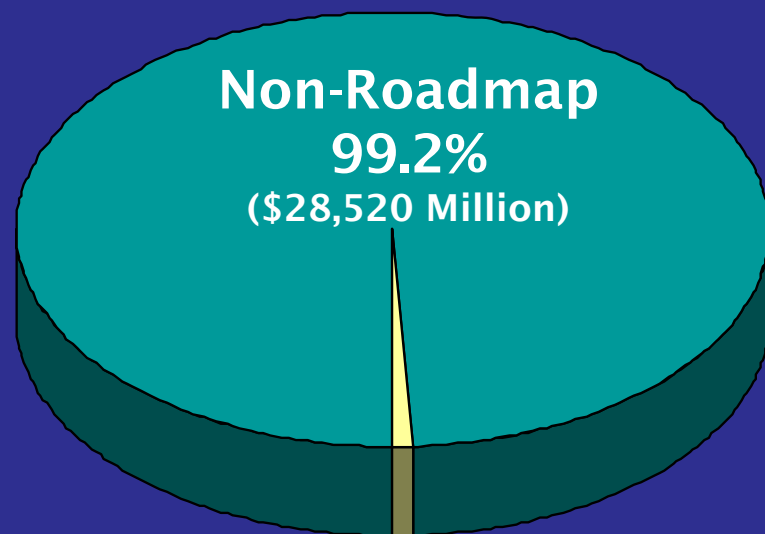
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# NIH Roadmap for Medical Research

FY2005 Request = \$28,757M



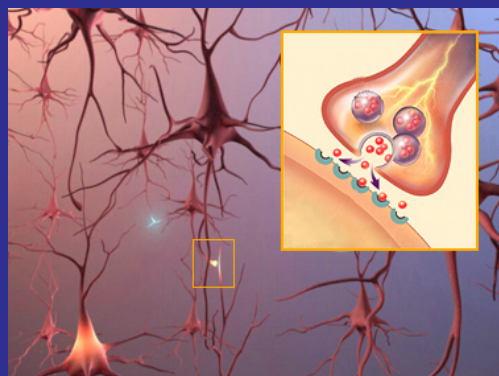
**Roadmap**  
0.8%  
(\$237 Million)



- Developed to increase synergy across NIH
- Not a single initiative but over 345 individual awards in FY 2005:
  - 40% basic
  - 40% translational
  - 20% high risk



# NINDS and *Trans*-NIH Initiatives



- NIH Roadmap:
  - Molecular Libraries Initiative
  - Interdisciplinary Research Initiative
- NIH Neuroscience Blueprint
- Autism Coordinating Committee
- Muscular Dystrophy Coordinating Committee
- NIH Pain Consortium

# What Is Really Happening?

## 3 Fundamental Drivers

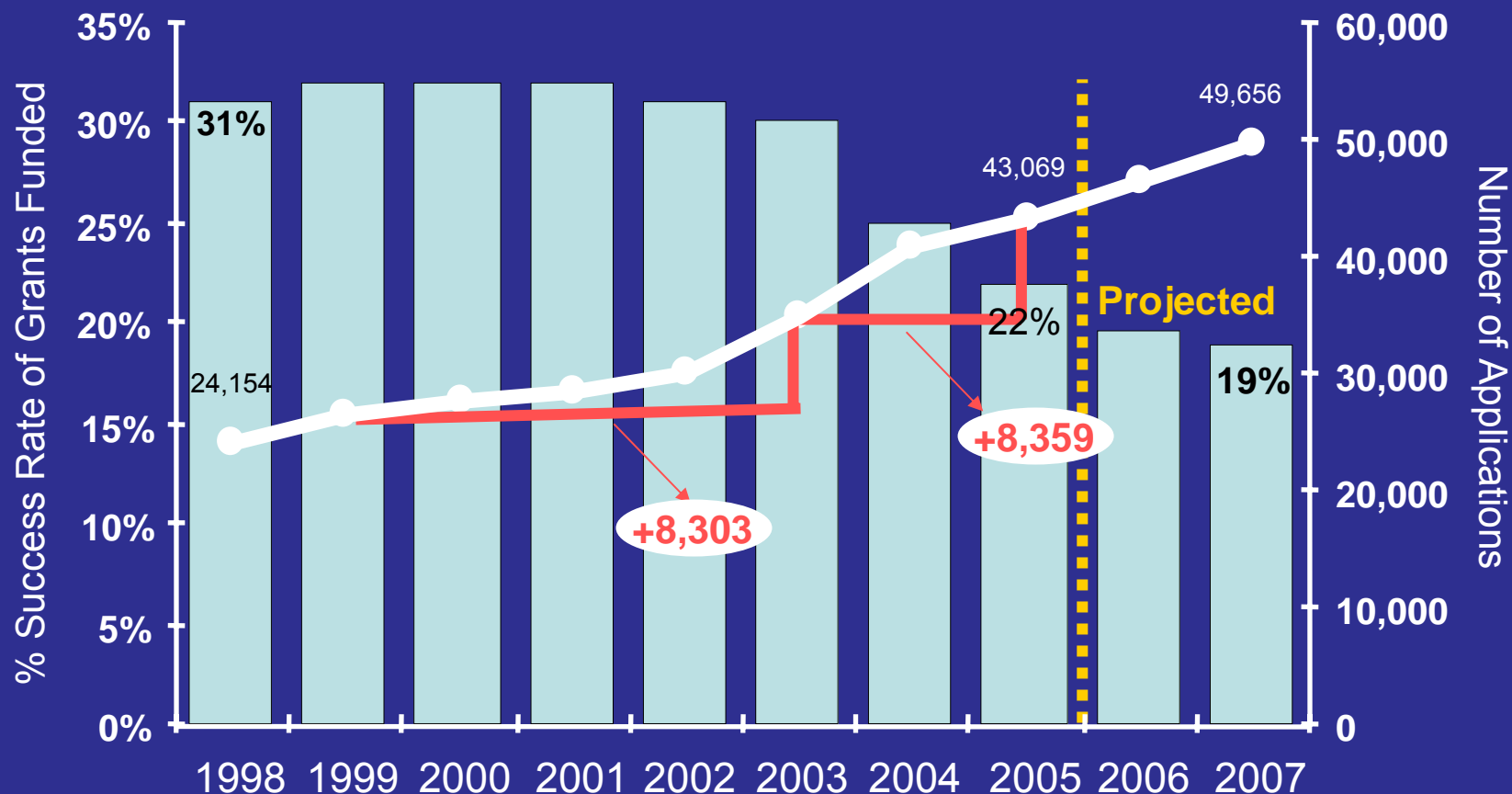
- Large capacity building throughout U.S. research institutions and increase in number of tenure-track faculty
- Appropriations below inflation after 2003
  - Increases of +3 % in '04, 2.2% in '05 and 0% in 06
  - Biomedical Inflation in 2004 was ~ 5%
- Budget cycling phenomenon





# New Grant Applications and Success Rates

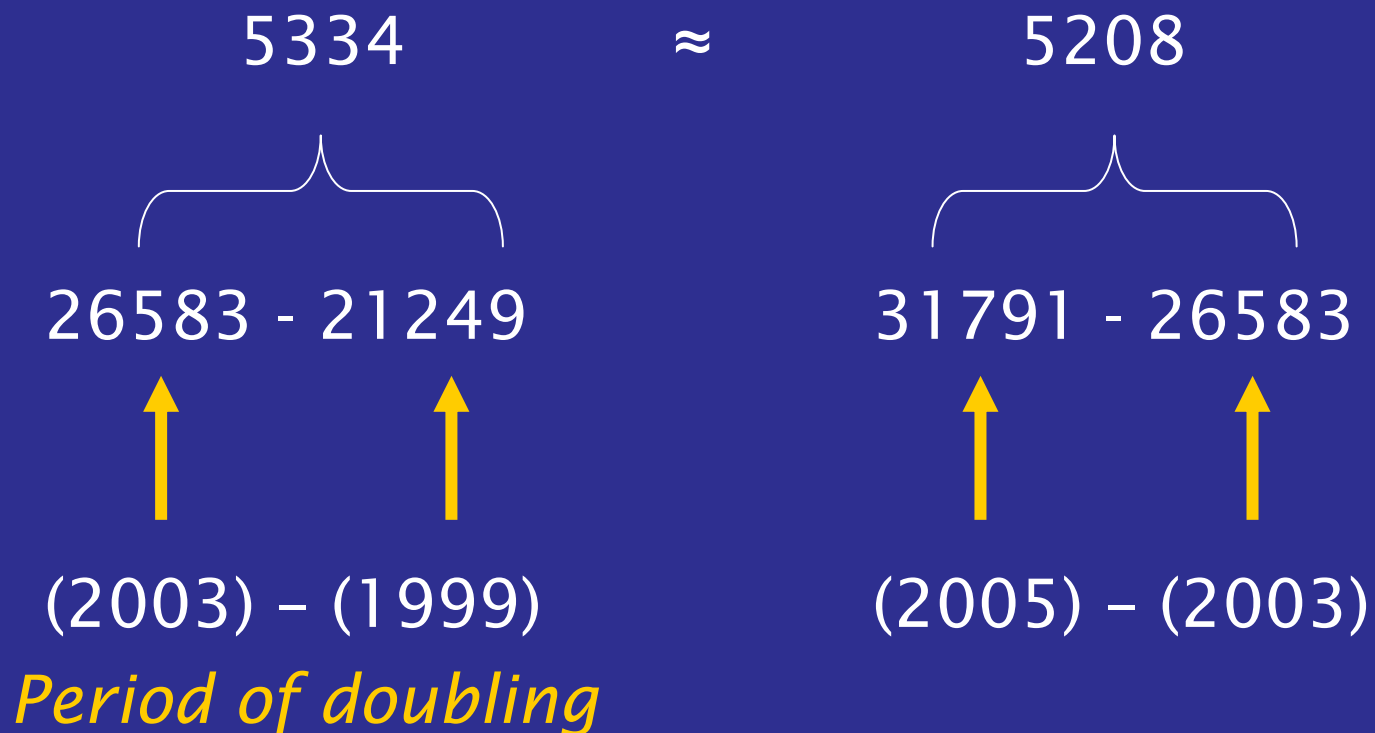
## *During and After Doubling Period*



■ Success Rates    —●— Applications



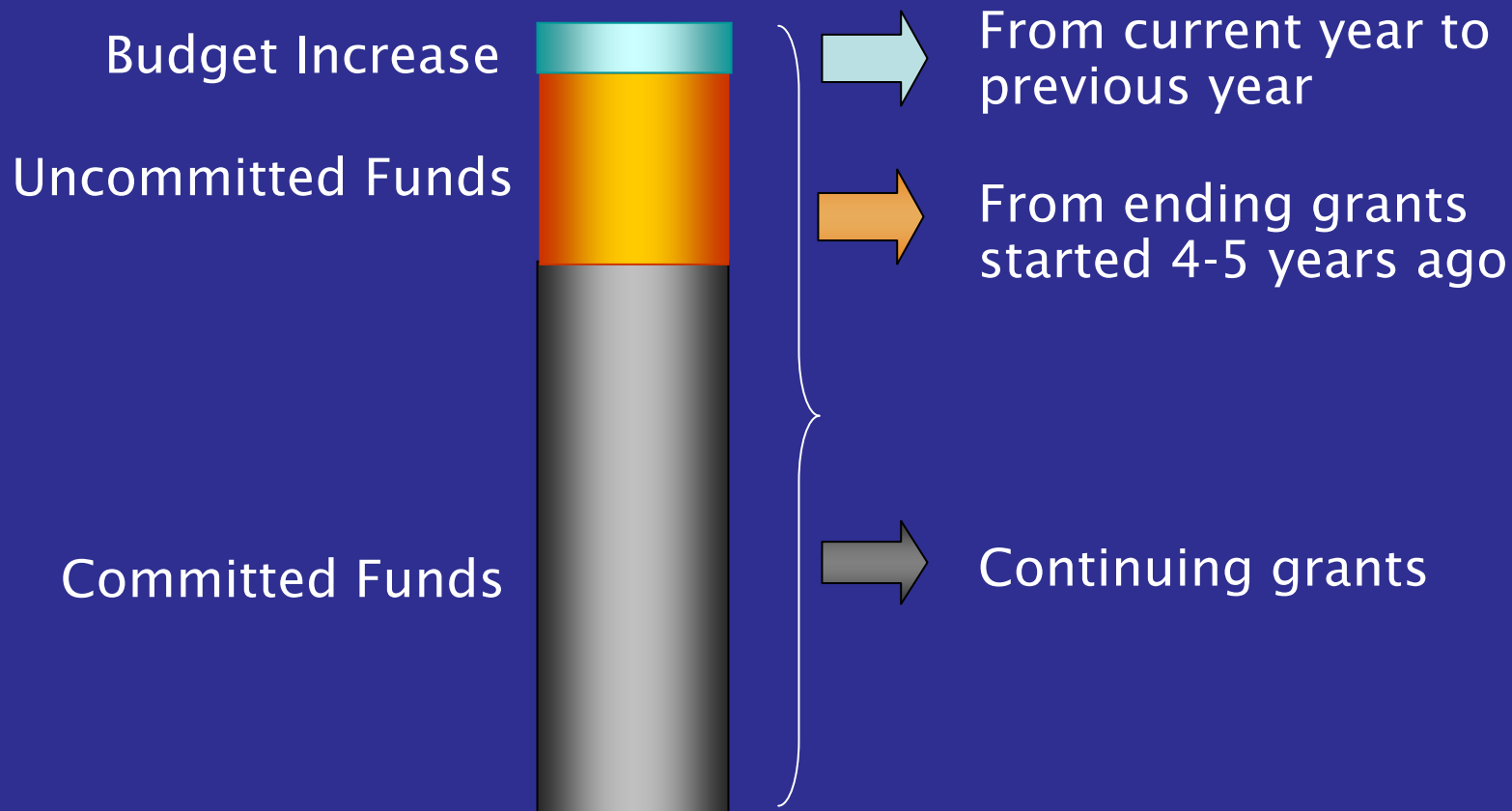
# As Many New *Applicants* in Past 2 Years as During Previous 5 Years!





# The Budget Cycling Phenomenon:

## *What Funds are Available in any One Year?*



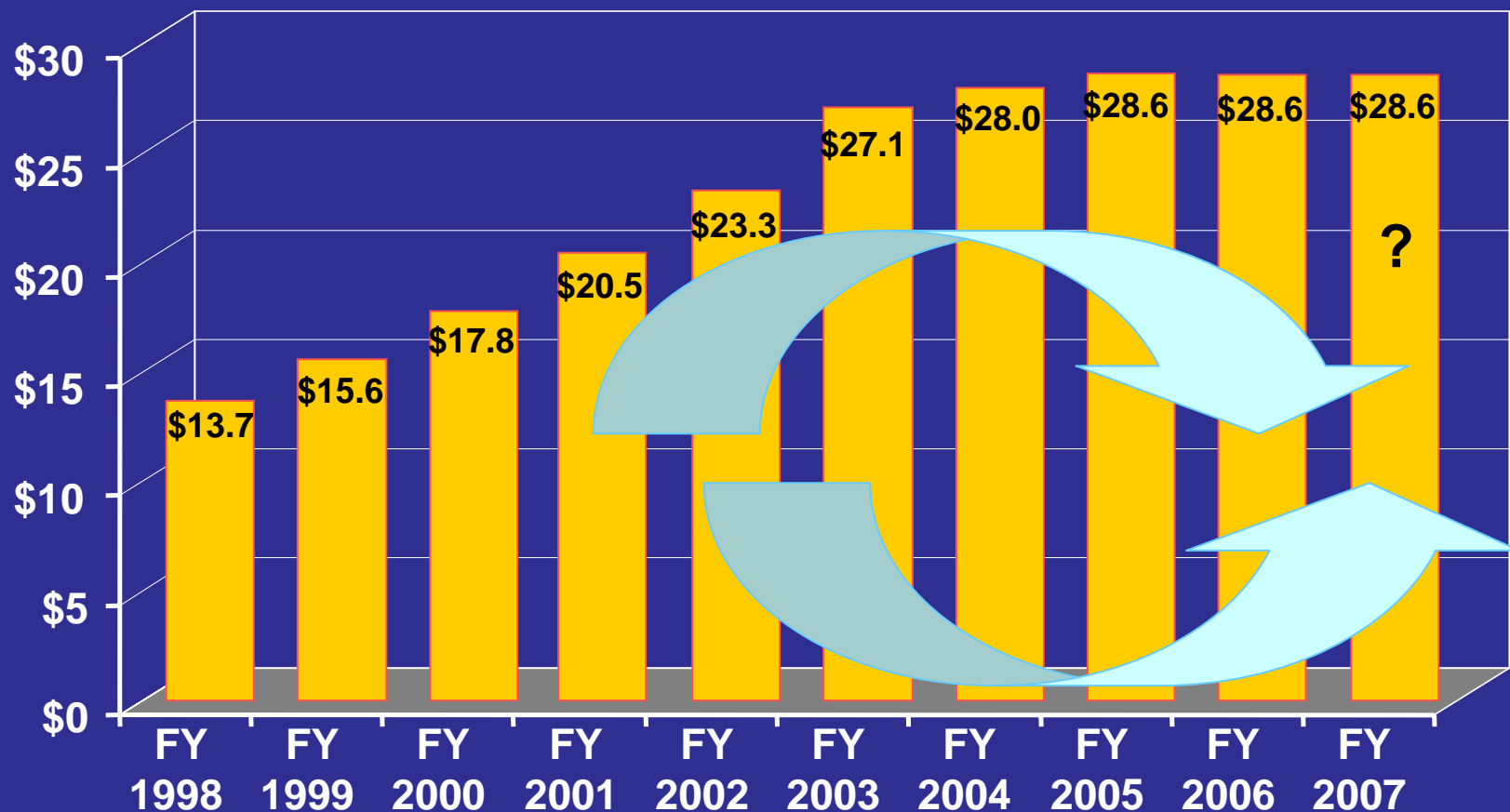
**NIH Appropriations**





# NIH Congressional Appropriations

Billions of Dollars



**DOUBLING**

# The Bottom Line:

*Demand for Grants “Took Off” Just as NIH Budget Was “Landing!”*



- NIH managed well despite small increases in 2004 (2.9%) and 2005 (2%) by shifting “one time” funds from 2003 to 2004
- Budget cycling effect will improve demand vs supply of grants in 2007 but *we need to educate public about need for sustainability in research*

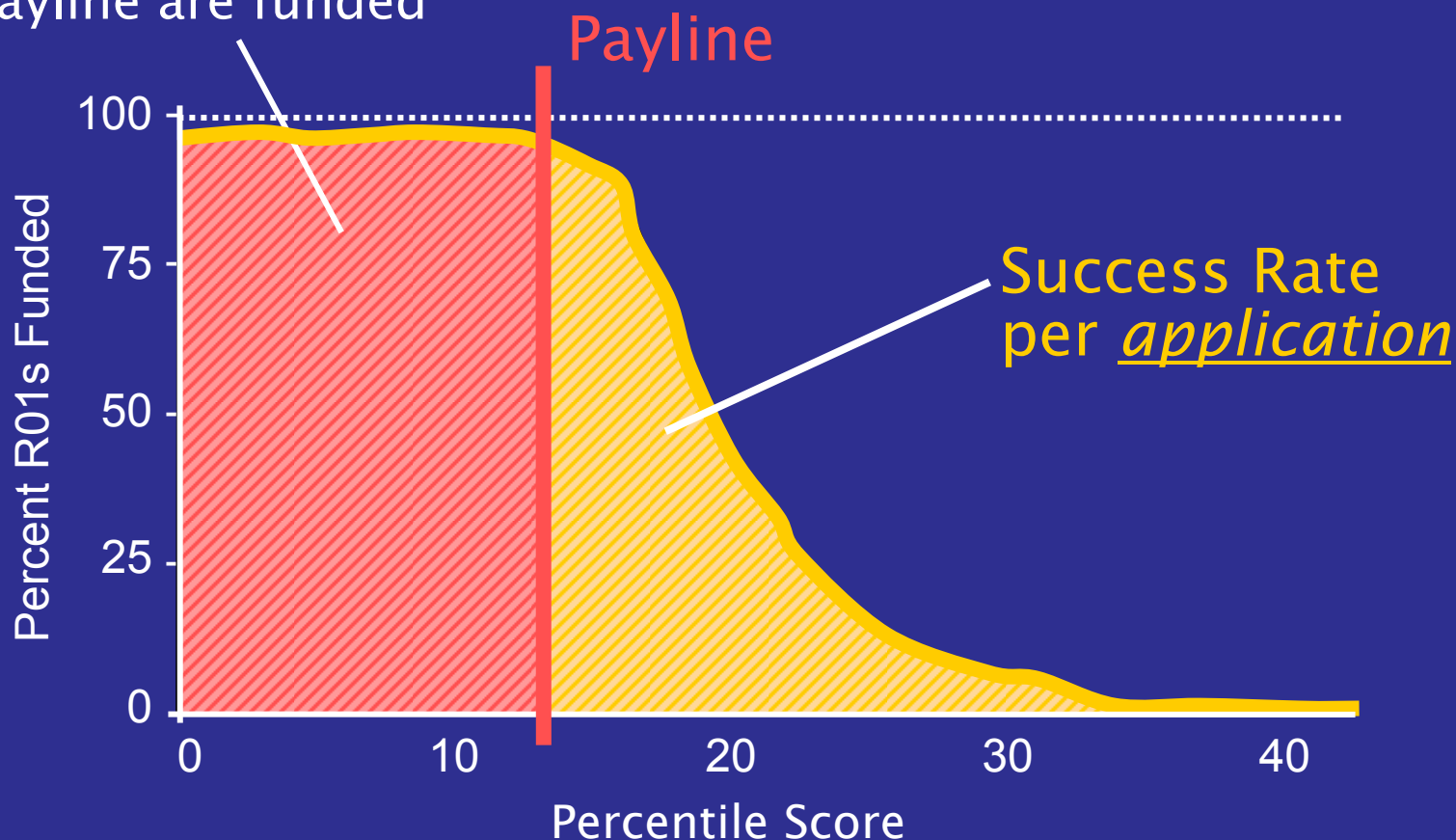


# The Question on Everyone's Mind: *What are MY chances of being funded?*



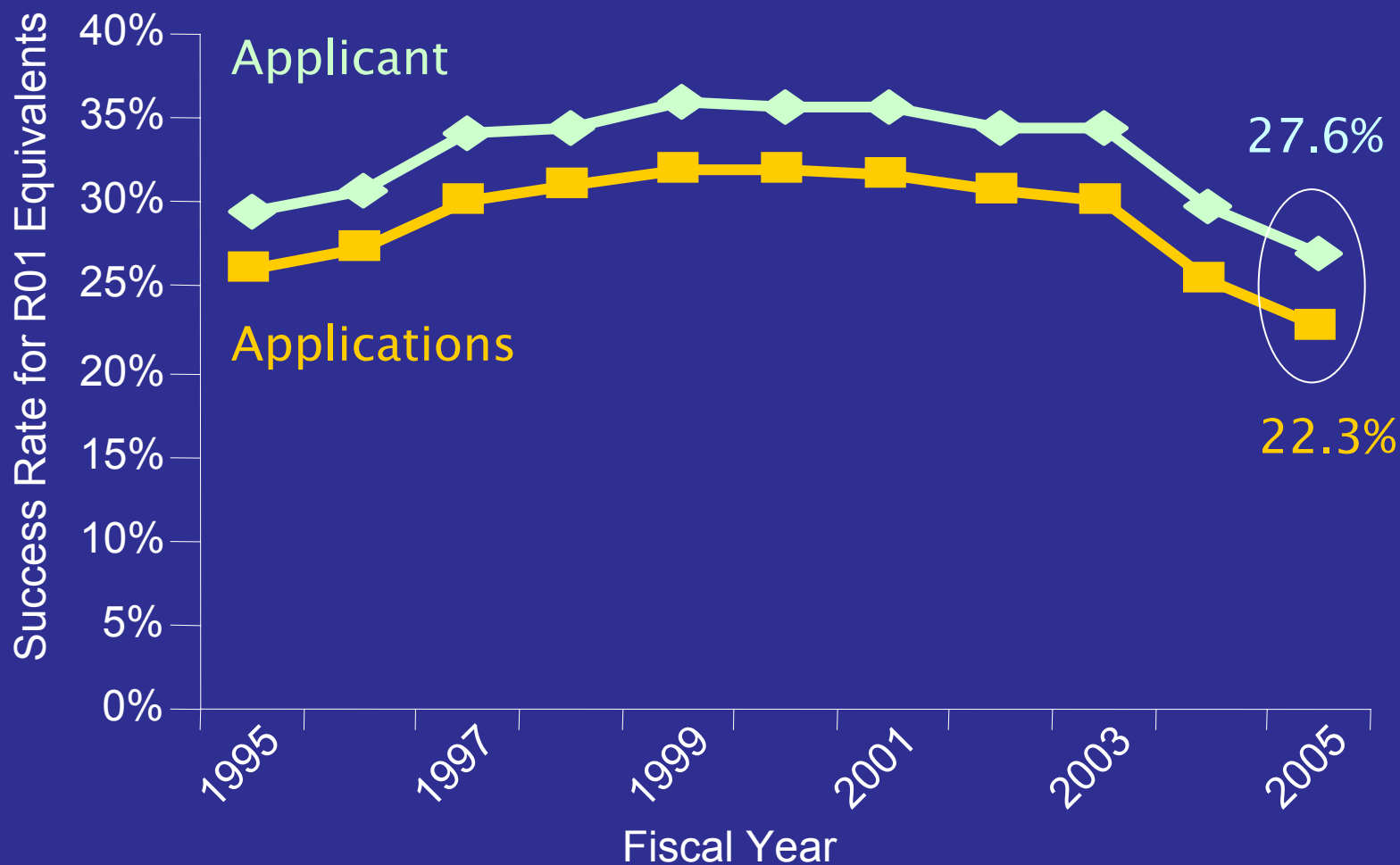
# Payline Is Not Funding Cut-off Line

>99% of grants under the payline are funded





# Success Rate per Application Understates Funding Rate per Applicant





# Where Do We Go From Here?

Adaptive Strategies

A Vision for the Future





# Strategies

- First: Know the facts
- Second: Develop adaptive strategies
  - Protect the essential: *Knowledge and Discovery*
  - Increase number of competing grants (supply/demand management)
  - Support new investigators
    - New Pathway to Independence Program
    - Institutes and Centers efforts to assist new investigators
- Third: Convey a unified message
  - Increase communications about positive impact of NIH at local, regional and national levels
- Fourth: NIH's exciting vision for the future





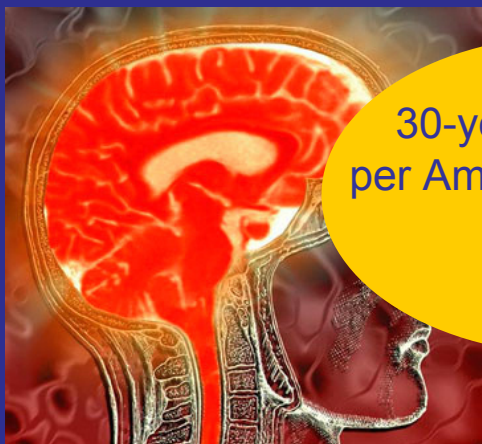
# Impact of NINDS Research



Average investment  
per American in NINDS

**~\$2.60**

*per year*



30-year investment  
per American in NINDS:

**~\$79**

*Total*

- Death rates from stroke have declined by 70% over past 30 years

Advances in Parkinson's disease:

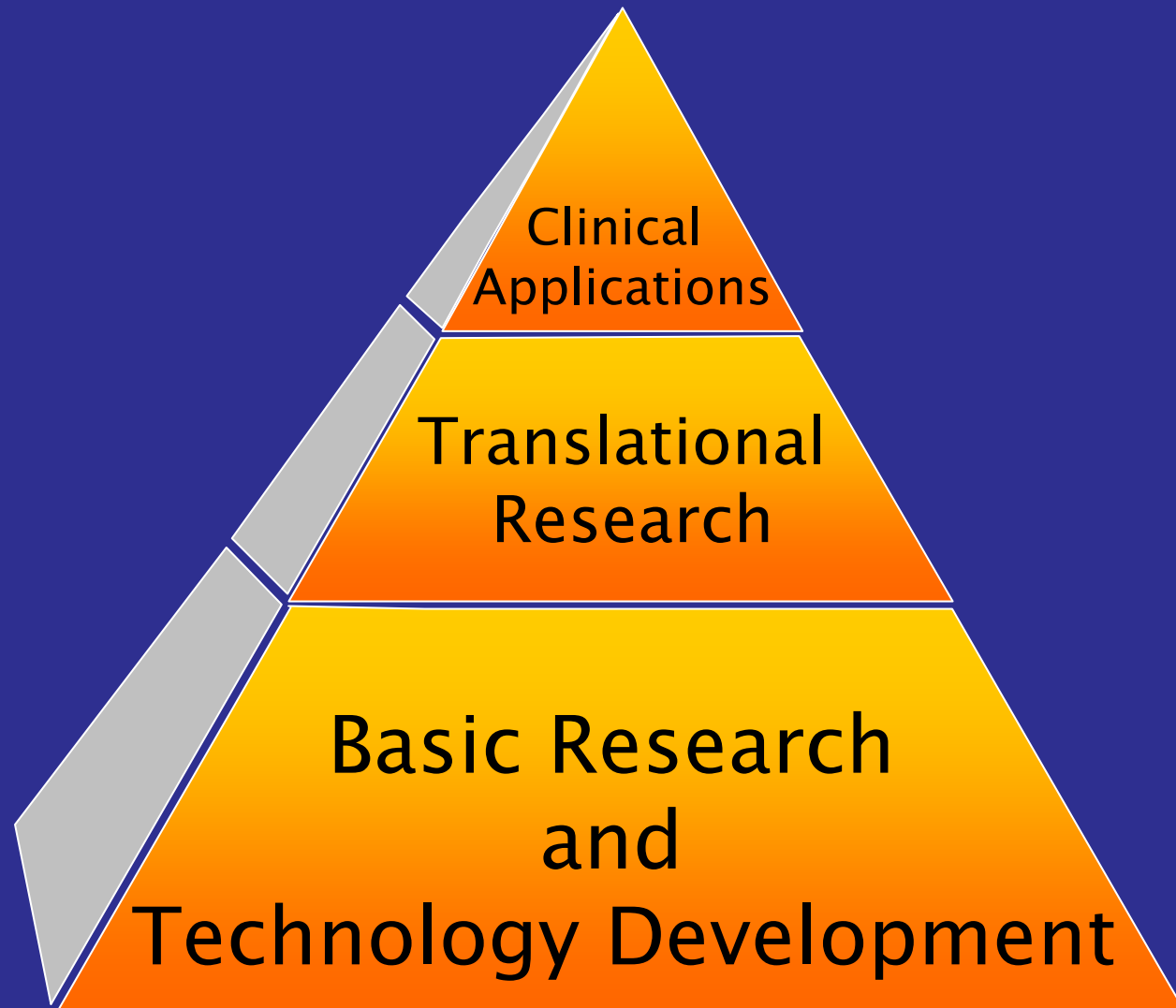
- Novel, maximally efficient approach to move promising therapeutics to clinical trials

Improved treatments, such as deep brain stimulation

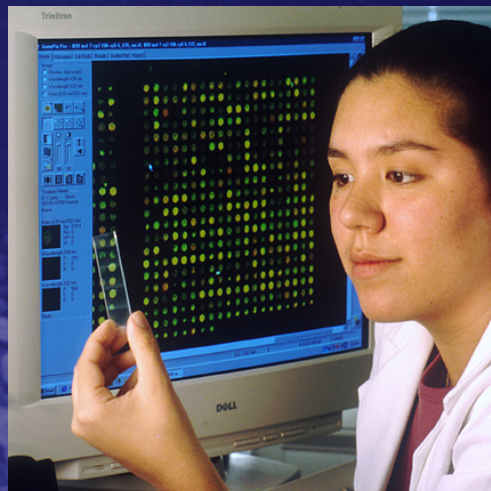
Future of Pain Management:

- Tailored medications based on gender, age, or other factors

# Basic Discovery Today Provides the Foundation for Tomorrow's Medicine



# The Future Paradigm: *Transform Medicine from Curative to Preemptive*

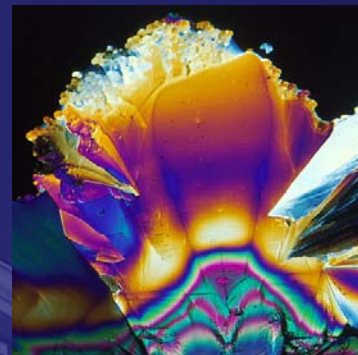


Predictive ↔ Personalized ↔ Preemptive



*Participatory*





# NIH *Transforming medicine through discovery*

